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OBSERVATIONS

O N A

LATE PUBLICATION

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CHELTENHAM WATER:

AND ON SOME

REMARKS OF THE CR—L R—RS

UPON A

TREATISE ON THAT SUBJECT.

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SINCE the publication of my Treatise on Cheltenham water, the alterative powers of this excellent mineral spring, though equal to the famous waters of *Egra*, have been denied: a direct proof of the truth of what I have advanced concerning the inadequate notions generally entertained about these matters, and an opinion singular enough; but with reason and experience against it, incapable of being supported by any arguments. Do we not know that steel and sulphur, both enter into its composition? and that though purgatives joined with them may lessen, they are far from wholly taking away their alterative powers? What we then allow to their grosser preparations, shall we absurdly deny to their highly attenuated, and most subtle state; as they exist in this water? Besides, does it not act both by the kidneys, and the skin, as all alteratives do? a man must be hard driven indeed to fall foul on such a notion, in order to confute my treatise: if

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that be the case. Pray how do Bath waters act, which, are also endued with chalybeate and sulphureous quantities, are they not alterative? If such an idea could get well established, the credit of both must infallibly sink in the opinion of all persons of judgment: but the notion is too inconsistent to deserve any farther notice, and naturally refutes itself. If the attempting to give such an idea of the Cheltenham water be intended to keep up a constant regular supply for the large company that attends the pump in the morning, It were far better to put the matter upon a fair and proper footing: and to do this by preventing an unnecessary waste of the water, from people drinking it who do not want it, and the fetching so much away in bottles: which, by reason of the subtle nature of its spirit, can be of little more use to the drinkers, than drinking it at a distance from the spot, well corked up, and sent in bottles for that purpose. So much for this Publication which shall be nameless, from the first sheet of it, which I picked up at Cheltenham, and is all I shall think it worth my while to peruse. Whose author, by thus denying the alterative powers of the water, appears infallibly to have forfeited and cut himself off from any just pretensions to a proper knowledge of it.

As to the Cr——l R——rs, with whose sceptical sentiments, confined ideas, and narrow ways of thinking, partial disposition and prejudices, I am well acquainted, all I could expect from them upon a subject that requires so large a compass of thought, and involves

involves so many great matters, that are not to be reduced to common-place notions and distinctions, reconciled to vulgar prejudices, nor tied up and held to the prevailing fashion, taste, and humour of the age; of which they have no adequate ideas, and which clashes with their principles; all I could expect, I say, was a disposition to cavil at, or misrepresent what I have wrote, though manifestly enough for their own good, and that of mankind in general. This I have for my pains from their ignorance or ingratitude. And they accordingly begin with an affected re-application of my motto to myself, by which they impotently pretend to try me; and then break out into an invective against the book: illiberally and unjustly insinuating, that if there be any thing in it, in their opinions well founded, it is, that we have no system of mineral waters, and greatly want one. Though they would willingly also deny me even this; because they say, I assert that the subtle spirit of waters is not to be understood: but they will please to add my words "by such" namely chemical "proofs": see preface, page 7: and because I say that the different waters cannot be imitated: which that they can to any purpose, I still persist in denying. Nay, I go farther, and declare, that they cannot even be well restored, nor drank with good effects any where, in general, but on the spot. They next contend that they are not to be understood by me, because I am so little conversant in chemistry: which is not true. Had the great naturalist *Pliny* no knowledge of the

nature of mineral springs, nor of the causes that produce them, because he did not use chemical experiments? without them I had clear ideas of the neutral nature of the chief salt in Cheltenham water: and that *Short* was defective in his notions of this grosser part, though he used chemical experiments to help him in his endeavours to gain a proper knowledge of it. Without them I knew there were sulphureous principles of a very peculiar kind in Bath waters; a matter so much contested: and that Buxton waters are prepared from a natural lime-stone; which mere chemists never dreamt of. But there need be no stronger proof, not only of their, but of an almost general ignorance in these matters, than the falling credit of Cheltenham water, and its lying so long in a kind of disuse: with the very peculiar late denial of its alterative powers by a medical gentlemen so long resident upon the spot. They next of all confidently assert, that all mineral waters are to be exactly imitated: which, if their meaning regards their purity, mild nature, real excellence, force and efficacy, they can never prove. They then give it as their opinion, that their credit is greatly owing to change of air, scene, and mode of life, together with chearful amusement: which, though these may sometimes have their uses, is a very unfair way of depreciating their virtues, and shews their ignorance about the matter. At length, they alledge, that their duty obliges them to declare (what without knowledge?) that the book both as a chemical and medical work, is imperfect and erroneous: and

and having thus drawn up their charge against it, resting on bare assertions, imperfect notions, and unjust insinuations unsupported by truth, here ends their first paragraph.

As to chemistry, that it has enabled any one to form just ideas of the nature and use of mineral springs, especially of their finer parts, we have no good example. It is true I did not get this notion of its incapacity, so consistent with experience, from being so conversant in it, as to write professedly upon the subject, but in a more natural way. Nor should I chuse to have my head full of it, and hardly any thing else, as the heads of some people are. The work however cannot be justly called imperfect, because it has not a chemical analysis for its object; it having referred that, as far as it could well go, and in regard of the grosser parts in Cheltenham water, to Doctor Fothergill's Experimental Enquiry: allowing him the merit of finding out the neutral nature of the chief salt in it; and also a chemical knowledge of its other saline properties, which other investigators in the same way missed of; exploding however at the same time a vulgar notion of chymists, that these natural are the same as their chemical preparations, insisting on their difference and superiority; and shewing the excellence of the neutral purging salt, and the influence of the saline parts upon each other in the composition of the water. As to my knowledge in chemistry, it is sufficient to enable me to treat of it as allied to my subject in
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natural philosophy, to understand its powers, and know its real and proper uses, which I have not denied. To know also that it is apt to mislead men in their notions of mineral waters; incapable alone of giving them adequate ideas of them. And did I not know this otherwise, the gross errors of chemists, and their confined ideas and weak conceptions of the nature and use of them, in their writings upon the subject, would teach me.

In order however to prove their assertions, we are here favoured with a passage, which they know not what to make of. For take a chemist from his experiments, and out of his chemical cant, and he is like a fish out of water, he knows not where he is. We are here favoured with a quotation, I say, from page 14. of the treatise, namely paragraph the 2d, to prove that I am no chemist. To which as a natural philosopher, by way of supporting it, I answer. That the air in water certainly undergoes a kind of preparation, in regard of purity, in being strained with the water through the earth. The fineness, subtle nature, and activity of its particles appear also to be increased by motion, and attenuation in the sky, or in the earth, as also preparatory to, or attendant on, its fixation in the latter, and the being duly and finally perfected, so as to produce that pure, fine-tasted, active and powerful spirit that is in springs. The process is undoubtedly gradual: and that the fixing it is performed by coolness, and compression which confine, compact together, and con-

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center its parts duly prepared for it, is pretty evident.

Even atmospherical air is often in a peculiar state of stability in frosty weather, and a kind of fixed condition, as far as that can be, and answer the purposes of respiration, from its purity, and the compression of its parts by cold. For as warmth, with vapour, loosen its texture on the one hand, so does cold compact its parts, and increase its density on the other. It is true, besides these powers, attenuation of its particles is also necessary to prepare them for being reduced, as in water, and some other liquids, to a truly fixed state.

Before the chemical term *fixed* came in fashion, and terms do not alter the nature of things, some good natural Philosophers were aware, that the air in mineral springs was in a state of compression, from its great expansion, and the force it exerts to recover its liberty, and regain its more natural atmospherical state, when this pressure is taken off. The Cr——l R——rs will not say, that the pure spirit of common springs is prepared on a sudden, and exactly in the same manner as in a chemical process. How is an elastic, and æthieral principle of this kind prepared and mixed with the subtle effluvia of highly elaborated juices, and a proper regular supply constantly kept up in the vessels of the body, to furnish the nerves with their proper fluid, promote the circulation of the blood with ease and freedom through its proper vessels, and prevent its inordinate heat and putrefaction? undoubtedly not by fermentation; nor merely from the supplies of fixed

air arising from the liquids taken in : but by the action of, and re-action upon, air received into and circulating in them ; by motion, attenuation, and expansion on the one hand, and compression on the other. Now if I had not faith to understand, and believe more than I can see with my eyes, for I must believe even in that case too, I should be as ignorant of these things as many others are. It is true, fermentation appears to be the true parent of the very elastic air in some liquids : this is, however, no proof that it is of that more simple kind in common water. And even that contained in fermented liquors never attains a perfect nature, till it has been in a state of coolness, compression, and confinement.

That the air is compressed under a state of expansion in warm mineral springs or *Thermæ*, is fully evident. But this is the case also with cold ones : whose aerial spirit is sometimes as well prepared, subtle, active, and powerful, as that of hot ones ; and when the pressure is taken off, and it lies open to the warmth of the atmosphere, apt to escape. Artificial fixed air is never so fully concentrated, but that it is under a perpetual endeavour by its elasticity to recover its more natural state. Else why is it necessary to keep it sealed up in bottles, lest it should thus alter its nature and fly off ? Similar to which is the case with that of a more natural kind under pressure and confinement in the earth.

Hereby we are led into pretty clear ideas of the manner of its preparation, and a knowledge of its true natural state. Nay, the matter is exemplified in the action and re-action, attenuation, expansion, and compression

pression or coercion, attending the fermentation in the preparation of artificial fixed air itself: which, however, at best is but a faint imitation of what is natural. For no good naturalist can suppose, that the natural process is by fermentation, in the preparation of the pure temperate spirit of common springs. He may with more apparent probability think it, in some measure, concerned, in that of mineral waters. But in the former case, he must have recourse to other principles; and none are so apparent, as those of coolness and compression, under a very simple and more naturally improved state of the elastic and expansive particles of the air resident in the water.

That motion and coolness restore the purity, and increase the elastic power of the air, we need not go far to be convinced? witness the shallow streams of rivers. And though the term *compressed* should not be allowed properly to express the state of the air *fixed*: yet that is no proof, that close confinement in, and the great coldness and pressure of the earth are not concerned in, and with the other powers above-mentioned, capable of reducing air to a fixed state. And it is evident, the more pure and subtle its parts are, whensoever so prepared, the more fine when they are fixed, will be the taste of the water, and the more active the expansion of the air in it, in recovering its native state.

As to the medical part of the work, three cases are selected by them, the 8th, the 3d, and the 2d; and they are mistaken in their observations upon them all. The former, they say, was evidently a common inflammation, though there is no mention of the word in-

inflammation, nor any inflammation attended it: it being of a chronic nature and some standing, as the uneasy sensations felt at times in it, and in the arm pit, evidently point out. And why may not such fluxes of bad humours upon the breasts, enlarging their vessels, and fixing upon their glands, be suspected of a cancerous tendency? when so many, without proper relief, at length have proved cancerous of late, in much younger persons.—Case the 2d, they will have not to be consumptive, though another person in nearly the same circumstances is said to have soon died of one. Because they have no ideas of consumptions but in their terminations, when in cases fixed upon the lungs no relief in general is to be had, nor any proper notions of a scorbutical gradual decline. But I would have these gentlemen understand that I am no thinker or practitioner by rote, who receive my ideas merely from others, and go on blindly in a beaten track unsupported by true notions of the original causes of diseases, and therefore cannot be accountable to those who are not furnished with the like knowledge. As to case the 3d, it had all the testimony of being in danger to prove consumptive, that all family scorbutical consumptive cases have: the gentleman's father and sister both died of them.

We are now entertained with an observation, that the author has given as little information on the real nature of the water, as on its medical effects. Now as to the latter, if the three cases selected had been proved erroneous, what honest conduct will warrant the drawing such conclusions as these with regard to

all the rest? as to the former, it is true I have not pretended to shew the exact weight of iron in any given quantity of the water, as others have, but which is foreign to the purpose; nor to ascertain the precise nature of the sulphureous particles, though doubting at the same time even of their very existence in it. But instead of this pretended knowledge charged with doubts and disagreement, I have, on the contrary made it clear, both from the smell of the water, and its effects upon the discharges of the bowels, that sulphureous particles of some kind are contained in it: and their high subtlety and great volatility, as well as of the chalybeate spirit and elastic air, have been also shewn in observations on their great disposition to fly soon off. Now to say in the face of all this, and a great deal more, that I give little or no information on the real nature of the water, favours a little too much of an assurance that is not commendable. It may not be information in their own way, and such as pleases them: it is however *experimental* in another way, and the best the subject will admit of. But they are peculiarly displeased with the water being said to possess a subtle, elastic, aerial (and I might have added, with *Hoffman*, ætherial, from the *principium inflammabile* it contains) mineral or chalybeate spirit, with volatile sulphureous principles: but this is really the case. And to call it only a mineral spirit, according to the usual phrase, conveys no proper idea. For if it be compounded, and of a nature peculiar, there is no coming at proper ideas, but by distinguishing the various parts of its composition, and describing

cribing its real nature and powers. When, therefore, we come to the necessity of the use of terms, to answer this purpose, I beg leave to assert, that to say there is an exquisitely subtle, elastic, aerial, chalybeate spirit in this water, and that it is also endowed with volatile sulphureous principles, gives ideas as adequate and perfect as its nature will well admit of, and far more exalted than mere chemical experiments ever did, or will attain. I have already shewn them that, with some other requisites to be in the next place attended to, they having such ideas has enabled me to form better notions of the nature and use of this mineral spring, than others by any other means could get: and I have communicated them that men might raise their minds up to them, and improve their more weak conceptions by them. Undoubtedly no human work is without its imperfections: but I can defy them to shew many real faults in this.

I am in a peculiar manner obliged to them for their last quotation, from page 31, line the 6th, to line the 2d in page 32, and which if they properly understood, they would not treat with ridicule. Now, though the notions intended to be there conveyed are well enough expressed, yet as I know it is out of their way, who are already got far on their journey in a road, through which they will not return, nor come into that way of true knowledge necessary for great attainments, by regaining the simplicity of mind which they have lost; though this, I say, be their case; and though I will not take upon me to furnish these gentlemen always with ideas, yet I will undertake in this instance

instance to set them right. They are there informed, that when men understand the whole animal œconomy, and the real causes of disease hereditary and acquired, and the influence of the various constitutions of the air upon bodies so affected and disposed, are not framers or followers of imperfect systems, nor attached to partial notions, they then from having such perfect knowledge of health and disease, will have a due insight into the ways of providential wisdom, and God's power in forming such excellent instruments as mineral waters, which far exceed the knowledge and power of man to frame, for the relief of the latter: gain a proper knowledge of their nature and powers, and know how to use them: but never till then. In other words, he that understands his trade will know the nature of, and how to use his tools.

The force of the passage then is more natural and proper than they were aware of. And indeed a part of the matter at least was not so very abstruse, but that a philosophical and medical writer has long since given intimation, though he did not expect to have it so soon exemplified*, that no rational attempt could be made to determine the virtues and uses of a mineral water, though we had ever *so exact and full a knowledge* of its contents, till the real internal nature of the solids and fluids of the body, the changes they are subject to, and the true seats and causes of distempers were understood†. It is this great knowledge that I contend for:

* For a proof of this, see case the first, and the reflections upon it.

† See the conclusion of Shaw's Enquiry into the contents, &c. of Scarborough waters.

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and, if people will let me, mean in due time to afford. But how comes it that these self-sufficient, profound judges were so ignorant about this matter? If this be ignorance it is of a gross kind, and if it be not ignorance it is something worse.

But when scepticism once lays hold on men's minds, and they begin to lose sight of the true principles of religion, what wonder is it that their faculties become gradually obscured, and that ignorance takes possession of their souls? Rendering them proud without knowledge, and not only incapable of attaining, but even averse to that of a more sublime kind, and sometimes, almost haters of those who have it: having not only their understandings blinded, but their judgments also so warped, and their wills often so perverse, partial, and depraved, as to be in many instances unfit for those honest and social duties they owe to each other.

After all these gentlemen have some qualms, and misgivings of mind, that, notwithstanding their authority, and all the pains they have taken to discredit it, the book will have its admirers. But why so? Why, "because it is wrote with so much confidence and plausibility."—They were determined to have a bold stroke at me at last: but the effort seems to be made with so much art and design, as to endanger their appearing in their proper colours:

Every writer who has a proper knowledge of his subject, will always treat it in a masterly manner, and with a certain air of confidence. But if confidence and plausibility may be joined together, they themselves have a more undoubted title to them than any others: but as to my writings, it is not in their power to even judge of them,

them, as I have heretofore told them, and they now see, much less to confound them.

Thus sink their weak objections one after another, till there are none left. And as it has been with them, and their remarks upon my writings, on former occasions, so do they fare on this: their loose opinions fall; their captious arguments fail. Yet thus it is they would lead men by the nose: assuming, under a mask of learning, a penetration of mind, a niceness of discernment, and a truth of sentiment, with which they are not endued; which renders them, in many cases, and under many circumstances, incapable of passing a true judgment, and deciding upon the real merits of the productions of other men. Though they seldom fail to let loose their passions, decry, and treat without mercy, or even decency, whatever they dislike: being, on the other hand, as partially affected towards what they chuse to favour; and this they call reviewing. And having first settled in their minds the matter of depreciating any work, they find no difficulty in trumping up a few remarks, or quoting a few passages that will best bear the colour they want to lay upon them, and answer their plausible pretexs that the book is so and so: but in the present case, dabbling a little too much laid them open to a reprimand that they well deserve. For let me have a criticism or an answer, not envious and detracting, partial and injurious, insidious, artful, and evasive, but that will stand examination. As these gentlemen do not appear to me properly to understand their trade, I will here present them with the character of a good critic.

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Every true critic has a great genius, a mind endowed with elevated thoughts, a sound judgment, and an honest heart; and is capable of writing well upon the subjects of those works whereon he passes judgment. But if these Pseudo-critics think to put their impertinent, vague, and exceptionable remarks, and bold assertions, upon a level with my writings, it is what I shall not admit of. And therefore here take the liberty of re-asserting the propriety of my Motto, by referring them back to the advice of the very acute and judicious author quoted in my title page; which I will take care to apply properly and effectually to them. And I heartily wish they may have the sense and modesty to use their critical talent wisely in future, upon subjects proportionate to their abilities, and not so rashly run their heads against every thing that they meet with. For the passage in a more extensive sense, regards affected critics as well as other incapable writers.

They may like or dislike my writings as they think fit: they were not intended merely for their use. They may also adopt *Virgil's* expressive character of *Bavius* and *Mævius*, and apply it how they please. But I beg leave to inform them, that these rascally writers of antiquity did not more infest him and *Horace* with their bad verses, than modern critics do some of the best authors, upon religious and other subjects; nor were they so hurtful to mankind,

These gentlemen undoubtedly know that *Lucian* was stiled *Deum hominumque derisor*. For the character is ever apt to be consistent: and when men have once persuaded themselves to make free with the sacred truths

of religion and the attributes of the Deity, or in other words, to deny the divine nature of their redeemer, they will find no great difficulty in mal-treating the writings nor even characters of men. In regard of the former, an inspired writer, they know, hath pronounced those blessed who have not sat in the seat of the scornful. And as to their rude and offensive taunts, low wit, unfair ways of depreciating, and other little arts of buffoonery, I cannot do better than refer them to the decision of the Poet I have already quoted, who cautions his countrymen concerning such persons in the following words :

—————, *solutus*
Qui captat risus hominum famamque dicacis,
Fingere qui non visa potest,
 ——— *hic niger est : hunc tu Romane caveto.*

For my part I ever had a sovereign contempt for all little geniuses, who aim at being witty at the expence of others ; and it is a sure mark of incapacity : but a critical buffoon as being most out of true character, is of all others the most contemptible. However, if they can satisfy the public in this matter, I meddle no more with it. But, though I forgive ill treatment, I shall ever hold myself at liberty to take notice of it : especially when men err so grossly, or as it should seem even wilfully, in their criticisms upon my writings. For could it be fairly attributed to mere ignorance, it might the better be dispensed with. And had they treated my writings and the public with ingenuity and candour, they would at least have had the credit of preserving their integrity, though they had been deficient in judgment.

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Beside the ill usage I have had from them, I was attacked for my notions of this excellent mineral spring, and endeavours to bring it into use, even before the publication of my treatise; from another quarter since. However, as I have settled matters with the above-mentioned gentlemen, and as both this treatise and my other writings have a strong view to the good of others, and I well know it is not in the power of all men to invalidate the force of the substantial matter contained in them, I will not make this latter, on the nature and use of Cheltenham water, farther a matter of controversy, by attending any more to the weak objections of any man. Let no plausible, stale pretences then insinuate that a proper knowledge of the nature and use of mineral waters may be gained by means that experience finds insufficient, and truth disowns. Such ill-founded opinions may indeed amuse the ignorant: but let it be remembered that I here declare, that as chemical methods have not, so they will not be able to give due notions of either: as in regard of the latter, namely, the use of mineral waters, *Shaw* has also well observed. I doubt not every medical gentleman will indulge his own private sentiments about it: and let him do it. And if he chuses to write, I apply to him, in regard of the philosophical and medical knowledge, and even moral sentiments contained in this treatise, in the words of *Horace*:

*Si quid novisti rectius istis,
Candidus imperti: si non, his utere mecum.*

F I N I S.



